

No. 754,174.

PATENTED MAR. 8, 1904.

N. W. THOMPSON.
HARROW JACK.

APPLICATION FILED OCT. 18, 1902. RENEWED JULY 16, 1903.

NO MODEL.

2 SHEETS—SHEET 1.

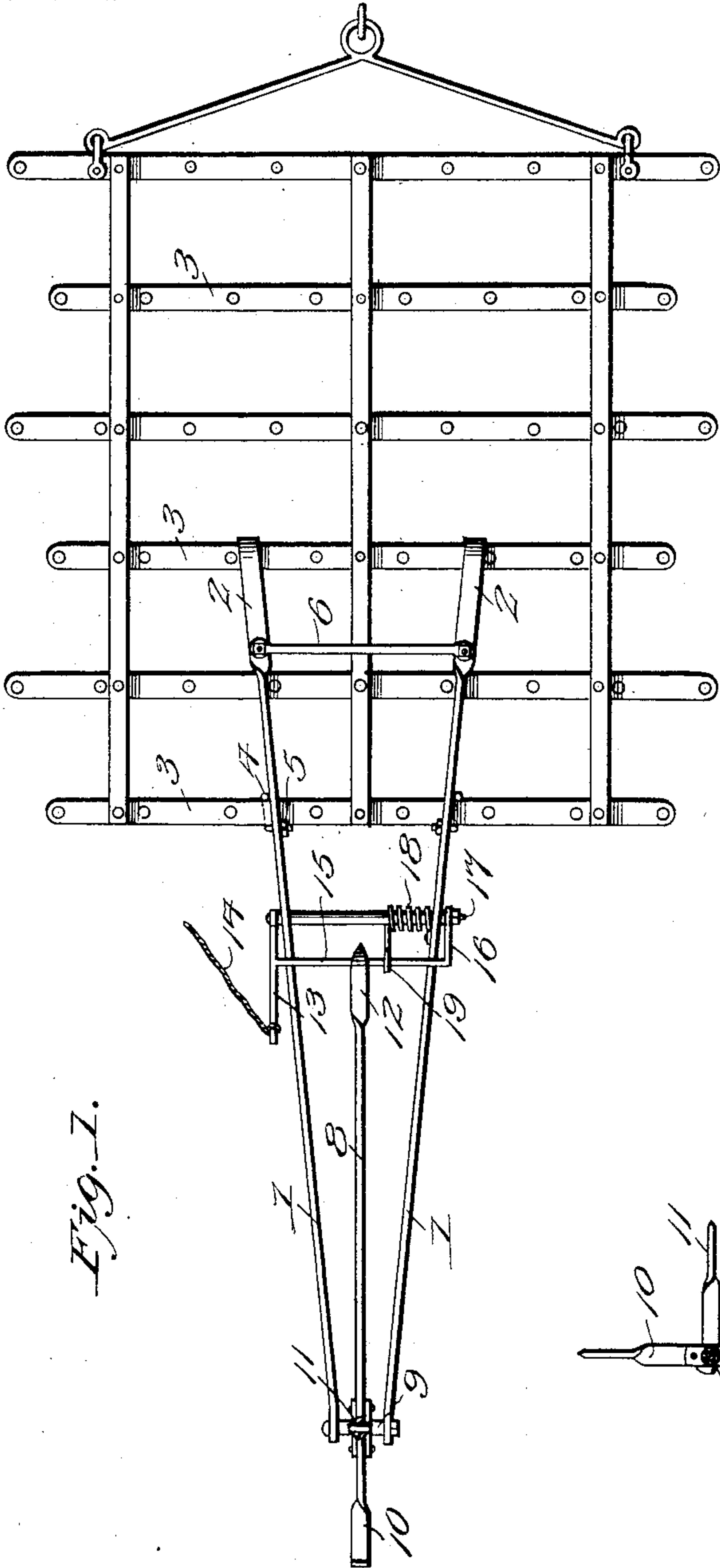


Fig. 1.

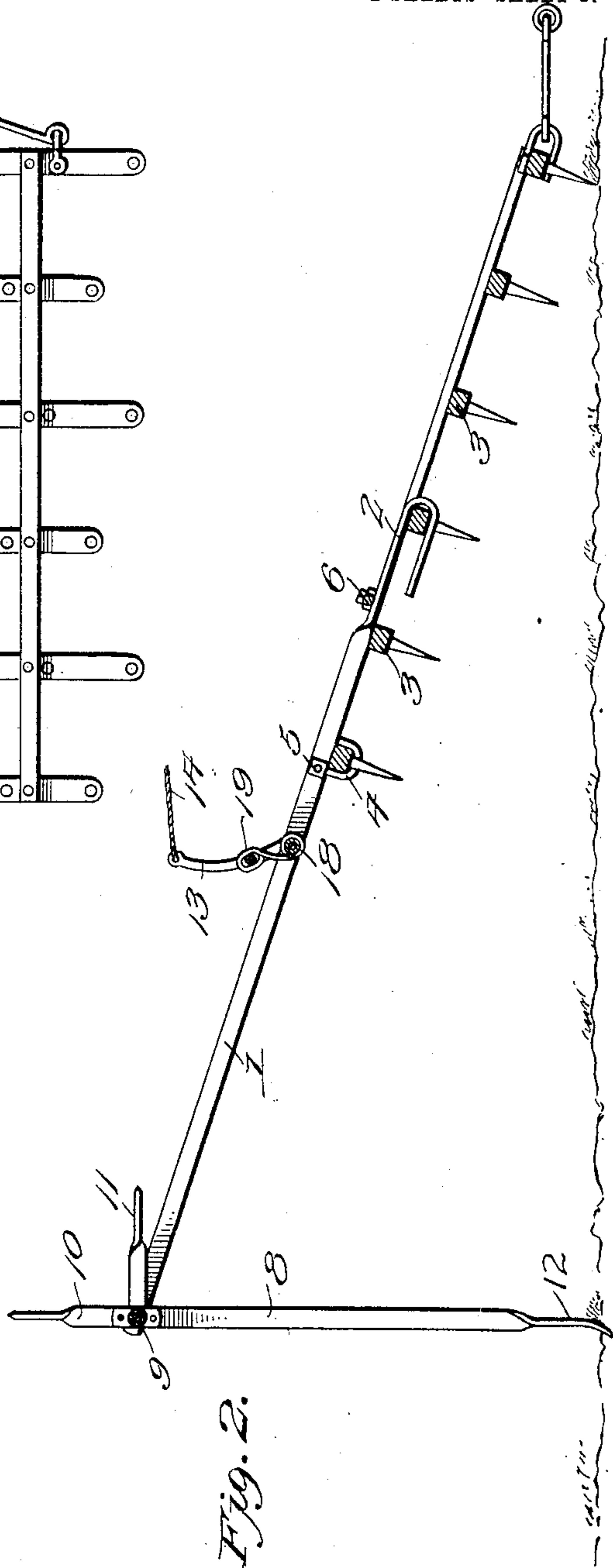


Fig. 2.

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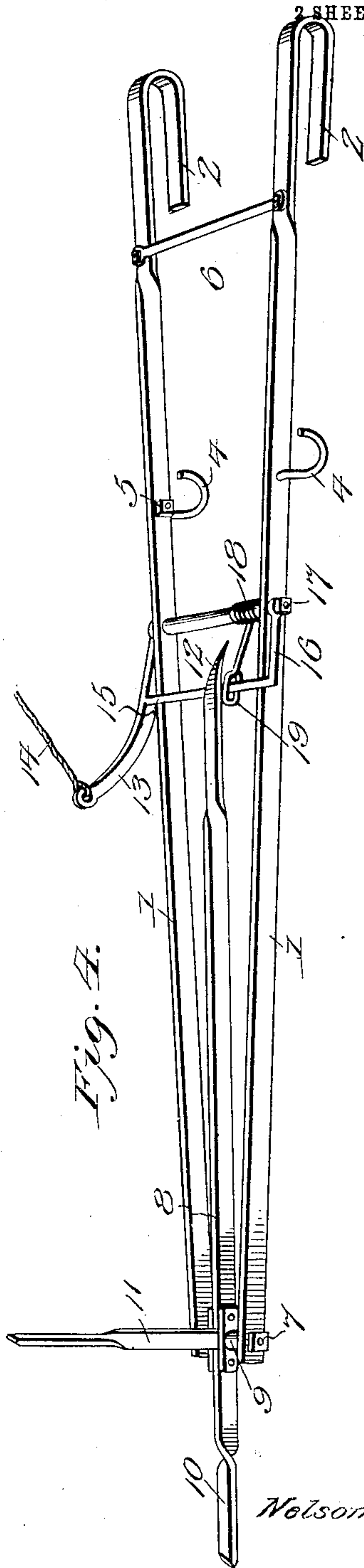
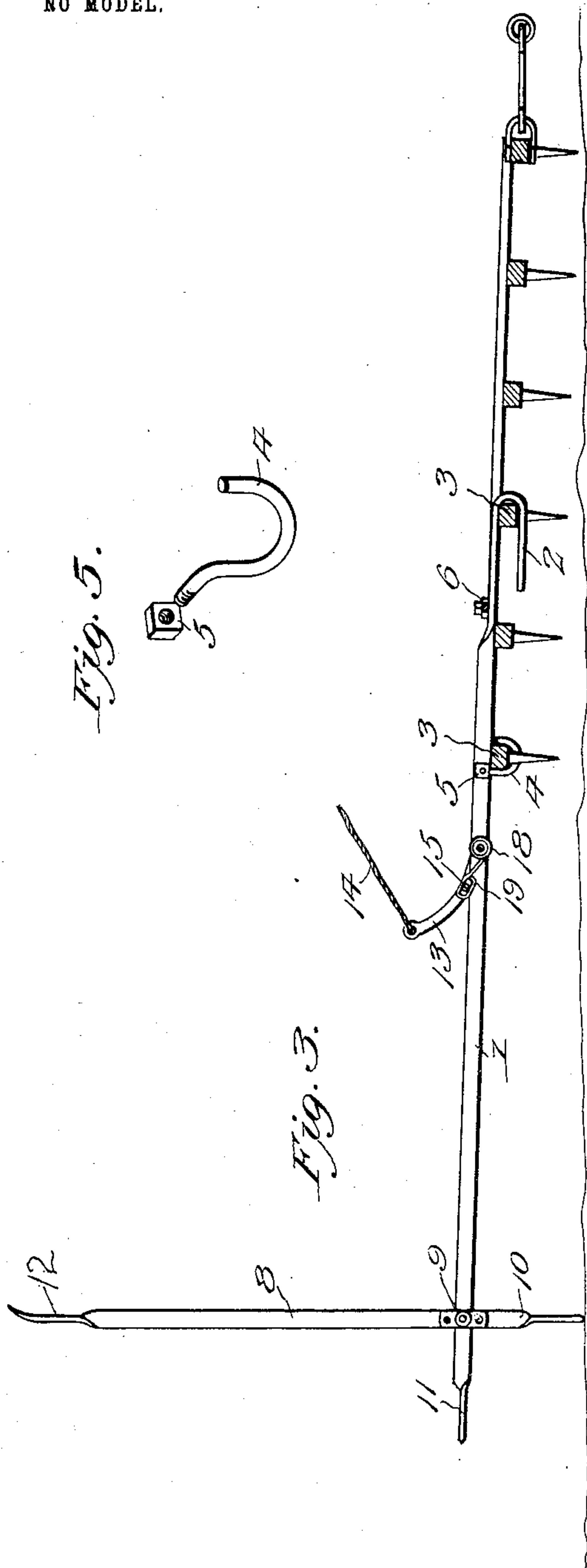
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UNITED STATES PATENT OFFICE.

NELSON W. THOMPSON, OF ERSKINEVILLE, OREGON.

HARROW-JACK.

SPECIFICATION forming part of Letters Patent No. 754,174, dated March 8, 1904.

Application filed October 18, 1902. Renewed July 16, 1903. Serial No. 165,873. (No model.)

To all whom it may concern:

Be it known that I, NELSON W. THOMPSON, a citizen of the United States, residing at Erskineville, in the county of Sherman and State of Oregon, have invented new and useful Improvements in Harrow-Jacks, of which the following is a specification.

This invention relates to harrow-jacks, and is in the nature of an improvement upon the construction disclosed in Letters Patent No. 696,697, granted to me April 1, 1902.

One object of the present invention is to provide a harrow-jack and a jack-frame adapted to be quickly and readily applied to any harrow and removed therefrom when not required for further use.

Another and one of the principal objects of the invention is to provide a harrow-jack of such form and construction that under the forward movement of the harrow the jack from the time it is tripped or released is caused to operate and revolve and return to its normal position of rest with a positive movement, which movement is continuous as long as the harrow is being dragged along the field. When, however, the main arm of the jack is restored to its normal position of rest, it remains inactive and cannot be thrown into operation except when it is tripped by the special means hereinafter set forth.

With the above and other objects in view, the nature of which will more fully appear as the description proceeds, the invention consists in the novel construction, combination, and arrangement of parts, as hereinafter fully described, illustrated, and claimed.

In the accompanying drawings, Figure 1 is a plan view of a harrow, showing a harrow-jack and jack-frame constructed in accordance with the present invention applied thereto. Fig. 2 is a vertical longitudinal section through the same, showing the position assumed by the parts when the harrow is elevated. Fig. 3 is a similar section showing one of the replacing-arms in engagement with the ground and the position of the main arm of the jack just before it drops to its normal position of rest. Fig. 4 is a perspective view of the harrow-jack, including the jack-frame and tripping device.

Fig. 5 is a detail perspective view of one of the harrow hooks or hangers.

Like reference-numerals designate corresponding parts in all figures of the drawings.

In carrying out the present invention I make use of the jack-frame, consisting, essentially, of a pair of side bars 1, which converge from their front toward their rear ends, the forward extremities of the side bars being recurved or bent back to form hooks 2, which are adapted to straddle one of the cross-bars 3 of the harrow, as clearly illustrated in the drawings. At a suitable point in rear of the hooked extremities 2 harrow hooks or hangers 4 are connected with the side bars 1 by having their shanks threaded or passed through openings in the bars 1, so as to receive nuts 5 by means of which the position or adjustment of the hooks may be fixed. The hooks 4 are adapted to engage another one of the cross-bars 3 of the harrow, and in this way the jack-frame is firmly secured to the frame of the harrow, the remainder of the jack-frame extending rearwardly from the harrow, as best shown in Fig. 1. The forward ends of the side bars 1 are connected by means of a stay rod or bolt 6, which serves to hold said side bars at the proper distance from each other and also to effectively brace the bars relatively to each other.

The rear ends of the side bars of the jack-frame are connected by means of a pivot pin or bolt 7, upon which is pivotally mounted the main jack-arm 8. Spacing-sleeves 9 are interposed between the jack and the side bars 1, so as to properly position the jack midway between the side bars 1, thereby admitting of the free and unrestrained rotation of the jack proper.

In addition to the main arm 8 the jack is provided with a pair of supplemental replacing-arms 10 and 11, which are much shorter than the main arm 8, but of sufficient length to engage the ground as the harrow is drawn forward. The arm 10 extends about in line with the main arm 8 and in reality forms a continuation of the arm 8 beyond the fulcrum-point 7. The remaining arm 11 extends at a right angle to the arms 8 and 10 and serves

at the proper time to engage the ground and restore the main arm 8 to its normal position, such position being illustrated in Fig. 4. The extremity of the main arm 8 may be suitably

5 bent or curved, as shown at 12, to more effectively enter and be engaged by the surface of the ground over which the harrow is drawn.

The tripping device essentially comprises a trip-lever 13, to which an operating trip-cord

10 14 may be attached for the purpose of operating the lever at a distance.

Extending laterally from the lever 13 is a cross bar or rest 15, which extends over the top of the side bars 1 and has its end portion

15 bent to form an angular extension 16, which is journaled upon the same pivot-bolt 17 as the lever 13, the pivot-bolt passing through and connecting the side bars of the jack-frame.

Encircling the bolt 17 is a coiled spring 18, one end of which is made fast to the frame and the other end provided with a terminal eye or loop 19, which receives the cross-bar 15 of the trip-frame, the tension of the spring being exerted to restore the trip-frame to its

25 normal position (shown in Fig. 4) after it has been raised for the purpose of releasing the jack proper.

From the foregoing description the operation of the machine will be readily understood.

30 The point of the main arm 8 of the jack normally rests upon the cross-bar 15 of the tripping device, as shown in Figs. 1 and 4. When it is desired to dump the harrow for the purpose of allowing trash and other adhering matter to

35 escape from the harrow-teeth, the operator pulls upon the cord 14 and swings the trip until the point of the arm 8 is free to fall upon the ground. Now in the forward movement of the harrow the point 12 enters the ground, and as it

40 moves backward it operates to lift the rear end of the jack until it reaches the vertical position. (Shown in Fig. 2.) This elevates the harrow-teeth sufficiently to enable trash to fall therefrom. In the further forward movement of

45 the harrow the arm 8 is carried rearward, allowing the rear end of the harrow-frame to descend until the shorter arm 11 engages the ground. As the rotation of the jack continues the third arm 10 is brought into engagement

50 with the ground, the effect being to swing the main arm 8 upward, as shown in Fig. 3. Finally, just as the arm 10 gets free from the

ground the weight of the main arm 8 causes the jack to fall to the position illustrated in Figs. 1 and 4, the point of said arm being 55 caught in its downward movement by the cross-bar 15 of the tripping device, in which position the jack remains until it is again tripped. Immediately after tripping the jack the spring 18 restores the trip-lever to its normal position 60 in readiness to catch the jack after it completes its full movement.

Having thus described the invention, what I claim as new is—

1. A jack-frame comprising a pair of rearwardly-converging side bars having their forward ends recurved to form hooks for engagement with the harrow, means for securing the jack-frame at another point to the frame of the harrow, a rotatable jack pivotally mounted between the convergent ends of the side bars, and a jack-tripping device carried by the jack-frame. 65 70

2. A jack-frame provided with means for securing the same to a harrow, a rotatable jack 75 pivotally mounted in the frame and comprising a main arm, replacing-arms of less length than the main arm and extending in different directions, and a tripping device for engaging and releasing the main arm of the jack, said 80 tripping device comprising a trip-lever, a cross-bar adapted to be moved thereby into and out of the path of the main arm of the jack, and a spring for restoring the tripping device to its normal position. 85

3. A harrow-jack comprising a jack-frame, means for coupling the same to the harrow, a rotatable jack pivotally mounted in the jack-frame and comprising a main arm, shorter arms extending respectively in line with and 90 substantially at right angles to the main arm, a tripping device carried by the jack-frame and consisting of a tripping-lever, and a cross-bar extending laterally therefrom and adapted to be moved by the lever into and out of the 95 path of the main arm of the jack, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

NELSON W. THOMPSON.

Witnesses:

W. H. MOORE,
W. STANLEY.